

### **Remarks**

Applicants note with appreciation the detail and thoroughness of the final Office Action dated July 10, 2008 (hereafter "Office Action").

By this paper, claims 41-42 have been amended. Claims 21-42 are pending in the application.

Claims 21-37 and 41-42 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bauer (USPN 4,304,749; hereinafter *Bauer*) in view of Desmond (USPN 7,214,348; hereinafter *Desmond*).

Claims 38-40 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Bauer* in view of *Desmond*.

### **Remarks Directed To Claim Rejection Under 35 U.S.C. § 112, 1<sup>st</sup> Paragraph**

Claim 41 is rejected for lacking support in the disclosure with regard to the phrase "at least one interconnect chemically different from said elastomeric portion." (the Office action, paragraph 1).

Claim 41 has been amended to read "at least one interconnect of glass, polymer, or metal." Support for the amendment is found at line 5 on page 6 of the specification. No new matter is introduced.

Claim 42 is rejected for lacking support with regard to the phrase "embedding the entirety of said at least one interconnect" because "a portion of the interconnect may stick out beyond the resin in order to allow for connection with the metal tube." (the Office Action, paragraph 1).

Claim 42 has been amended to read "embedding substantially the entirety of said at least one interconnect..." to incorporate the suggested possibility wherein a residual portion of the interconnect may "stick out beyond the resin in order to allow for connection with the metal tube." Support for the amendment is found in Figure 3 and the Examiner's suggestion in paragraph 1 of the Office Action. No new matter is introduced.

Reconsideration and withdrawal of the rejections to claims 41-42 is solicited.

***Remarks Directed to Rejections to Claims 21-37 and 41-42  
under 35 U.S.C. § 103(a) over Bauer in view of Desmond***

Claim 21-37 and 41-42 stand rejected under 35 U.S.C. § 103(a) over *Bauer* in view of *Desmond*. (the Office Action, paragraph 3). As stated in paragraph 3 of the Office Action, "*Bauer* teaches the basic claimed process including a fluidic device having at least one interconnect (col. 2, lines 28-60; col. 5, lines 15-25; Fig. 1) -- body member 12 and cover plate 13 constitute the at least one elastomeric portion and substrate, and passages 14 and 15 constitute two interconnects . . . . *Bauer*, however, does not teach a microfluidic device. *Desmond* teaches a microfluidic oscillator . . . ". For at least the reasons given below, Applicants respectfully traverse the rejections.

Independent claim 21 in current form recites a process comprising "positioning at least one elastomeric portion onto a rigid substrate, said elastomeric portion containing ... at least one fluid passage; providing at least one interconnect to said elastomeric portion; encapsulating said elastomeric portion(s) on all sides thereof where interconnect(s) are present ..." (emphasis added).

*Bauer* offers no teaching or suggestion as to "encapsulating said elastomeric portion (s) on all sides where interconnect(s) are present" recited in claim 21. *Bauer* teaches injecting plastic material into space 18 and "upon injecting plastic into space 18 . . . a band of plastic is formed to match the contour of space 18 . . . the finally assembled unit is made up of the cover plate 13, the body member 12 and the plastic material injected into space 18." (Figure

Moreover, the elastomeric portion is appreciated in the instant specification to be flexible. In fact, the flexibility and distortability of the elastomeric portion are intended such that "relatively complex channel structures may be created, even involving undercuts" (lines 1-7 on page 2 of the specification). The flexibility of the elastomeric portion is further emphasized in the instant independent claim 21 itself, wherein the substrate onto which the elastomeric portion is positioned is comparatively emphasized as "rigid".

Contrary to the Examiner's assertion as cited above, the body member 12 of *Bauer* is not the elastomeric portion recited in the instant claim 21. In fact, "it should be noted that the body member 12 . . . could instead be metal or other suitable material which retains its shape" (col. 2, lines 57-60; emphasis added). The rigidity of the body member 12 is appreciated for *Bauer's* intended purpose of housing an oscillator 10 (Figure 1), a solid object for structural integrity.

*Desmond* is cited but fails to cure *Bauer's* deficient teaching detailed above. *Desmond* generally teaches a microfluidic device (Abstract). In particular, nowhere does *Desmond* teach or suggest encapsulating an elastomeric portion on all sides where interconnect(s) are present as recited in claim 21. *Bauer* and *Desmond*, alone or in combination, fail to teach or suggest at least one element as recited in independent claim 21. As such, inventions embraced by claim 21 and all the claims dependent therefrom are entitled to patentable weight.

Reconsideration and withdrawal of rejection to claims 21-37 and 41-42 under 35 U.S.C. § 103(a) over *Bauer* in view of *Desmond* is solicited.

Moreover, Applicants submit independent ground exits for the patentability of claims 41-42. Claim 41 recites the step of "providing, to said elastomeric portion, at least one interconnect of glass, polymer, or metal." The specification states:

By "interconnect" is meant a tube, wire, cable, optical fiber, etc., which is used to supply fluid to or receive fluid from the device, or through which a monitoring signal is passed or capable of being passed.

Specification, p. 7, ll. 21-23

Together with the material and functionality defined above, the interconnect(s) of claim 41 present drastically different shape and made of different materials comparative to the elastomeric portion onto which the interconnects are provided. These are not mere obvious design variants to *Bauer's* integral structure having the passages 14/15 and the body member 12. Simply, *Bauer* neither teaches or suggests that the body member 12 is elastomeric while the

passage 14/15 are made of glass, polymer, or metal, a material clearly different from the elastomeric material.

*Bauer* also fails to teach or suggest the step of "providing, to said elastomeric portion, at least on interconnect of glass, polymer, or metal" as recited in claim 41. As illustrated in Figures 1 and 6 of *Bauer*, the two passages 14 and 15 regarded by the Examiner as the interconnects of the instant claim 21, are structurally integral to the body member 12. *Bauer* provides no teaching or suggestion as to providing the passages 14, 15 in glass, polymer, or metal while keeping the body member 12 elastomeric. In fact, and as addressed above, the body member 12 of *Bauer* is at least suggested to be rigid and the rigidity thereof is appreciated for *Bauer's* intended purpose of housing an oscillator 10, a solid subject, for structural integrity.

Claim 42 recites the step of "embedding substantially the entirety of said at least...." By substantially it means the entire length of the interconnect excluding merely any residual end portion for connecting with the tubes 33 (Figure 3). Please see the Examiner's suggestion stated in paragraph 1 of the Office Action. Such a design is desirable to immobilize the interconnects for more accurate fluid transportation and transduction and to provide structural integrity of the entire fluidic device covered by the instant claims.

Reconsideration and withdrawal of rejections to claims 21-37 and 41-42 under 35 U.S.C. 103(a) over *Bauer* in view of *Desmond* is solicited.

**Rejection Of Claims 38-40 Under 35 U.S.C. § 103(a) Over Bauer In View Of Desmond**

Claims 38-40 are rejected under 35 U.S.C. § 103(a) over *Bauer* in view of *Desmond* (the Office Action, paragraph 4).

As stated in paragraph 4 of the Office Action, the Examiner believes that "*Bauer* teaches the basic claimed process including a fluidic device having at least one interconnect (col. 2, lines 28-60; col. 5, lines 15-25; Fig. 1) -- body member 12 and cover plate 13 constitute the at least one elastomeric portion and substrate, and passages 14 and 15 constitute two

interconnects . . . *Bauer*, however, does not teach a microfluidic device. *Desmond* teaches a microfluidic oscillator...

For at least the reasons given below, Applicants submit that the claims 38-40 are patentable under 35 U.S.C. § 103(a) over *Bauer* in view of *Desmond*.

Independent claim 38 in current form recites a process comprising "positioning at least one elastomeric portion into a rigid substrate, said elastomeric position containing ... at least one fluid passage; providing at least one interconnect to said elastomeric portion; encapsulating said elastomeric portion(s) on all sides thereof where said interconnect(s) are present ..."

Applicants incorporate by reference the entirety of the remarks made herein in connection with *Bauer* and *Desmond*. As stated above, *Bauer* and *Desmond*, alone or in combination, fail to teach or suggest at least the element of encapsulating an elastomeric portion on all sides thereof where interconnect(s) are present. As such, inventions embraced by claim 38 and all the claims dependent therefrom are entitled to patentable weight.

Reconsideration and withdrawal of rejection to claims 38-40 under 35 U.S.C. § 103(a) over *Bauer* in view of *Desmond* is solicited.

### **Conclusion**

For the foregoing reasons, Applicants believe that the final Office Action of July 10, 2008 has been fully responded to. The present amendments and remarks directed thereto were not presented earlier because Applicants believed that the previous claim amendments and remarks addressed all issues of patentability. Since the present claim amendments do not raise any new limits, Applicant believe that it is appropriate to enter this amendment after final. Consequently, in view of the above amendments and remarks, Applicant respectfully submit that the application is in condition for allowance, which allowance is respectfully requested.

Please charge any fees or credit any overpayments as a result of the filing of this paper to our Deposit Account No. 02-3978.

The Examiner is requested to telephone Applicant's attorney if it would advance the prosecution of this application.

Respectfully submitted,

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